What Is Claimed Is:

1. A method for predicting the future state of a weather condition relative to an aircraft, the method comprising:

accessing a first weather radar image generated relative to the aircraft;

accessing a second weather radar image generated after said first weather radar image and having a similar relationship to the aircraft as said first weather radar image;

mapping said first weather radar image onto said second weather radar image;

comparing said first and second weather radar images; and

forecasting information describing a weather condition represented by said first and second weather radar images.

2. The method recited in claim 1, wherein each of said first and second weather radar images further comprise weather radar images generated by a weather radar resident on-board the aircraft.

3. The method recited in claim 2, wherein said second weather radar image further comprises a weather radar image generated at a time after generation of said first weather radar image.

4. The method recited in claim 3, wherein said comparing said first and second weather radar images further comprises comparing said first and second weather radar images as a function of said time between generation of said weather radar images.

5. The method recited in claim 4, further comprising displaying said forecast information describing said weather condition.

6. The method recited in claim 5, wherein said forecast information further comprises information sufficiently advanced in time as to allow an appropriate response.

7. The method recited in claim 5, wherein said forecast information further comprises information advanced over one of a selectable period of time and a fixed period of time.

8. The method recited in claim 5, wherein said forecast information further comprises information describing a track of said weather condition

9. The method recited in claim 8, further comprising:

accessing a flight path of the aircraft;

comparing said forecast track of said weather condition with said flight path; and

predicting a coincidence of said flight path and said weather condition.

10. The method recited in claim 9, further comprising generating an alert as a function of said coincidence of said flight path and said weather condition.

11. The method recited in claim 10, wherein said alert is one or more of a visual alert and an aural alert.

12. The method recited in claim 8, wherein:

said forecasting information describing a weather condition further comprises forecasting a weather radar image representative of said weather condition relative to the aircraft; and

said displaying information describing said forecast track of said weather condition further comprises displaying said forecast weather radar image.

13. A method for predicting the future position and intensity of a weather condition relative to an aircraft using a weather radar resident on-board the aircraft, the method comprising:

recording a first weather radar image generated by an onboard weather radar;

recording a second weather radar image generated after said first weather radar image;

spatially and temporally mapping said first weather radar image onto said second weather radar image;

predicting a future track of a weather condition as a function of said first and second weather radar images; and

displaying said predicted future track of said weather condition.

14. The method recited in claim 13, further comprising:

retrieving a stored flight path of the aircraft;

comparing said flight path with said predicted future track of said weather condition; and

determining a coincidence of said flight path and said weather condition.

15. The method recited in claim 14, further comprising generating a warning as a function of said determining a coincidence of said flight path and said weather condition.

16. The method recited in claim 15, wherein:

each of said first and second weather radar images further comprise respective first and second images representative of said weather condition;

said comparing said first and second weather radar images further comprises comparing first and second states of said weather condition; and

forecasting a future state of said weather condition.

17. The method recited in claim 14, further comprising:

retrieving a phase of flight of the aircraft; and

determining a potential threat to the safety of flight as a function of said future state of said weather condition and said phase of flight.

18. The method recited in claim 17, wherein said generating a warning is further a function of said potential threat to the safety of flight.

19. The method recited in claim 18, wherein said displaying said predicted future track of said weather condition further comprises displaying one or more of said future position and said future intensity of said one or more weather cells.

20. A method for using an electronic circuit to predict the future position and intensity of a weather condition relative to an aircraft using a weather radar resident on-board the aircraft, the method comprising:

recording a first weather radar image generated by an onboard weather radar;

recording a second weather radar image generated at a time after said first weather radar image;

accessing said first and second recorded weather radar images;

with the electronic circuit, referencing said first and second recorded weather radar images to a common physical location;

with the electronic circuit, analyzing said first and second weather radar images;

with the electronic circuit, predicting a future track of one or more weather cells as a function of said analyzing said first and second weather radar images; and

displaying said predicted future track of one or more of said weather cells.

21. The method recited in claim 20, further comprising:

determining an intended flight path of the aircraft;

with the electronic circuit, comparing said predicted future track of one or more of said weather cells with said intended flight path; and

with the electronic circuit, predicting a coincidence of said intended flight path and one or more of said weather cells.

22. An electronic circuit for use with a weather radar system to predict the future state of a weather condition relative to an aircraft, the electronic circuit comprising:

a memory for storing a plurality of machine instructions;

a processor coupled to said memory, said processor executing said plurality of machine instructions to implement a plurality of functions, said functions comprising:

a) accessing a first weather radar image generated relative to the aircraft;

b) accessing a second weather radar image generated after said first weather radar image and having a similar relationship to the aircraft as said first weather radar image;

c) referencing said first weather radar image to said second weather radar image;

d) comparing said first and second weather radar images; and

d) forecasting as a function of said first and second weather radar images information describing a weather condition represented by said first and second weather radar images.

23. The electronic circuit recited in claim 22, wherein said plurality of functions further comprises generating a video signal representative of said forecast weather condition information.

24. The electronic circuit recited in claim 23, wherein:

said processor is further coupled to receive from a flight management computer a signal representative of the aircraft's intended flight path;

said forecasting information describing a weather condition further comprises forecasting a future track of said weather condition; and

said plurality of functions further comprises:

comparing said forecast track of said weather condition with said flight path; and

predicting a coincidence of said flight path and said weather condition.

25. The electronic circuit recited in claim 24, wherein said forecasting information describing a weather condition further comprises forecasting a state of said weather condition at or about said coincidence.

26. The electronic circuit recited in claim 25, wherein said plurality of functions further comprises generating a warning signal as a function of said coincidence.

27. The electronic circuit recited in claim 26, wherein:

said processor is further coupled to receive from a flight management computer a signal representative of the aircraft's intended phase of flight at or about said coincidence; and

wherein said generating a warning signal is further a function of said intended phase of flight.

28. The electronic circuit recited in claim 27, further comprising a weather radar unit coupled to said processor.

29. An electronic circuit for coupling to a weather radar system on-board an aircraft to display weather information and forecast weather data, the processor comprising:

a weather radar processor adapted to receive weather radar return signals from a receiver portion of a weather radar system resident on-board an aircraft and convert said weather radar return signals into weather radar image signals representative of weather information relative to said aircraft contained in said weather radar return signals;

a memory coupled to said processor and adapted to receive and store said weather radar image signals; and

a weather incident prediction function operated by said processor and coupled to said memory to receive first and second different ones of said stored weather radar image signals, said weather incident prediction function adapted to forecast future weather information relative to said aircraft as a function of said first and second stored weather radar image signals, and generate a signal representative of said future weather information.

30. The electronic circuit recited in claim 29, wherein:

said storage of said weather radar image signals is further a function of time; and

said forecast of future weather information relative to said aircraft is further a function of said time.

31. The electronic circuit recited in claim 30, wherein said future weather information further comprises a future track of one or more weather cells described by said weather information contained in said weather radar return signals.

32. The electronic circuit recited in claim 31, signal representative of said future weather information further comprises information describing said future track of said one or more weather cells.

33. The electronic circuit recited in claim 32, wherein:

said weather radar processor is further adapted to receive a signal representative of an intended flight plan of said aircraft; and

said weather incident prediction function is further adapted to predict a coincidence of said intended flight plan and one or more of said weather cells.

34. The electronic circuit recited in claim 33, wherein said weather radar processor is further adapted to generate a warning signal as a function of said coincidence prediction.

35. The electronic circuit recited in claim 34, wherein said warning signal is further a function of a phase of flight of said aircraft.

36. The electronic circuit recited in claim 32, further comprising a display coupled to said processor and adapted to receive each of said weather radar image signals representative of weather information contained in said weather radar return signals and said signal representative of said future weather information, said display comprising a screen adapted to display each of said weather information contained in said weather radar return signals and said future weather information.

37. The electronic circuit recited in claim 36, wherein said processor is further adapted to generate weather radar transmission signals; and further comprising:

a transmitter coupled to receive said weather radar transmission signals from said processor and output said weather radar transmission signals to a radar antenna; and

a receiver coupled to receive weather radar return signals from a radar antenna and output said received weather radar return signals to said processor.